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RULES

FOR THE

CONDUCT OF THE WAR-GAME ON A MAP.

1896.

By Authority.

LONDON:
PRINTED FOR HER MAJESTY'S STATIONERY OFFICE,
BY HARRISON AND SONS, ST. MARTIN'S LANE,
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HENRY MORSE STEPHENS

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CHAPTER I.

General Description of the Game.

The War Game is intended to afford a representation of military manœuvres. It is played on a map drawn to a large scale, the troops engaged being indicated by small metal blocks, coloured Red for one force, Blue for the other.

Detail of Players and Umpires.

To carry out a game in the most complete manner possible, it is necessary to have a sufficient number of officers to fill the following posts:—

Two officers to represent the Commanders of the opposing forces.

Subordinate officers to command any detachments of importance from the main body, *e.g.*, the cavalry when acting alone, or any other body of troops not under the immediate supervision of the Commander.

The Umpire and two Assistant Umpires.

An officer to keep a journal for recording the progress of the operations, time of the despatch and receipt of messages, losses, &c.

The game may, however, be played with a minimum number of three persons, one to act as Umpire, and the other two to command the opposing forces.

The Scheme.

For each game a scheme must be drawn up by the umpire or an independent person: this course, although very desirable, will seldom be feasible except at large stations. Great care should be taken in framing the scheme, which should be free from any ambiguity of interpretation. The framer should himself previously follow on the map the probable course of the operation he has originated, and thus ascertain that it is practicable for each side. The scheme should contain one "general idea" for both sides, and a "special idea" for each.

It is important in order to afford to Commanders practice in framing orders, that the non-combatant, as well as the combatant units should be included; such as medical units, baggage train, &c. Although these units ought to be dealt with in any orders issued for the movements of the forces, they need not be placed on the maps, as their presence would tend to complicate the game.

The framing of orders is perhaps the most valuable training to be derived from war games; importance, therefore, should be specially attached to this subject.

The force on either side should not, as a rule, exceed one division of the regulated strength and organization.*

The contending forces should be placed, as a rule, at a considerable distance—not less than 10 miles—apart, for as soon as the main bodies on either side are thoroughly engaged, the operations unavoidably become unlike reality, and consequently the interest in any further operations ceases.

General idea. The "general idea" should contain the strategical-conception† on which the operations are based, together with the object which each side is to endeavour to attain, and should not, of course, contain any special information which in actual war would be in possession of only one of the two opposing forces.

Special idea. The "special idea" should be the natural sequence of the "general idea," and will obviously be different for each side. It should contain:—

1. The strength and composition of the force;
2. Its distribution at the commencement of the game;
3. The immediate object in view;
4. The assumed date and hour at which operations commence.
5. Any information of the movements, strength, *morale*, and disposition of the enemy which may be in the possession of the Commander-in-Chief.

The Umpire should make known before play commences the supposed atmospheric conditions, wind, weather, &c.; the simplest plan being to say the weather is as on the day of playing.

Although no absolute rule need be laid down, it will generally be found desirable to fix some hour in the evening as the supposed time at which the troops are handed over to the Commanders of the opposing forces, and to call on each to send to the Umpire his dispositions for that evening, and his orders for the following morning.

Memorandum. Each Commander should write a short memorandum giving his view of the operation to be undertaken, and stating in general terms the mode in which he proposes to carry it out. The memorandum should contain any details necessary for the opening of the game which would not properly find a place in the orders, such as distribution of outposts on the previous evening, arrangement of camps, &c., which may have been left

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* In exceptional cases infantry in wagons, field telegraphs, &c., may be allowed, but the introduction of such adjuncts tends to complicate and lengthen the game.

† A strategical conception is not always necessary; for the purposes of the game the two opposing forces may be supposed to be operating against each other without introducing a larger scheme of which such operations form part. The "general idea" should be as simple as possible.

to the discretion of the players. The object of the memorandum is to enable the Commander to realize the actual military situation at the opening of the game as it would be presented to his mind on service by the force of circumstances. It also assists the Umpire in the conduct of the game.

Orders. With this memorandum, but on separate paper, he should forward to the Umpire his orders for the day of action. These should be precisely similar, both in form and substance, to those which would be issued in the field, and having been once issued, the players must, as a rule, be held strictly to them.

If the Umpire finds that any order issued contravenes either the general or the special idea, *e.g.*, if troops are ordered to move on the right bank of a river when this has been specially forbidden, he should send the document back to the Commander for revision and correction; but in no case must mistakes, such as omission of mention of some body of troops, &c., be brought to the notice of the Commander.

These preliminaries having been duly carried out, usually one or more days before the game is actually played, the game proceeds as follows:—

Maps. Three maps should be provided, either in separate rooms, or separated from each other by screens; one for each player, and one in the centre for the Umpire.* Each Commander and his subordinates will be allowed access only to their own map, the Umpire and his assistants moving from one side to the other.

Pieces. At the commencement of the game metal blocks representing the forces on either side will be arrayed on their respective maps by the Assistant Umpires, in accordance with the dispositions and orders of the Commanders, and on the centre, or Umpire's, map the forces of both sides will be similarly arranged.

During the progress of the game all actual movements of the metal blocks will be made only by the Assistant Umpires, in accordance with the directions of the players and the decisions of the Umpire.

Whenever any portion of one of the opposing forces comes within the view of the other, the corresponding blocks of the former must be placed on the map of the latter and *vice versâ*. But it must be borne in mind that these blocks are intended to serve rather as indications of the enemy's presence than to show the exact force at the spot, a question always difficult to ascertain in the field. The Umpire should therefore direct that only such pieces be put on the player's map as will correspond with the knowledge he is supposed to have acquired of the enemy's strength, position, &c. As events develop themselves the actual force will be shown.

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* Where this arrangement is impracticable from want of maps or of players, it will be found possible to carry out the game on two or even on one map, using small screens to prevent either Commander seeing more of the movements of his opponent than service conditions would permit. At the Kriegsschule at Hanover each side uses a small scale map ($\frac{1}{80000}$), and one set of large scale maps is used by the Umpire. This plan shortens the game.

It will thus be seen that at the commencement of the game one player will have blue pieces only on his map, and his opponent red only, while on the Umpire's map both blue and red will be shown. As the game progresses, more and more red pieces will appear on the map of the blue player, and *vice versâ*, till at the end of the game the three maps will, as a rule, present almost the same appearance.

Time. During the game a record must be kept of the imaginary time, as the actual time necessary for moving the pieces, deciding questions, &c., will generally differ considerably from the time that would be taken in the actual operations in real warfare. This is best done by means of a clock face with movable hands, but a black board and chalk will serve.

The length of (imaginary) time for each successive movement of the troops on both sides will be determined by the Umpire, who will exercise his discretion as to the time he allows, having regard to the chances of the opposing forces coming into collision. The time taken in deciding upon and issuing orders should be deducted from the length of time allowed for the move. Thus at the beginning of the game, when the contending forces are a long way apart, it may be possible to allow the troops to be moved for an (imaginary) hour or even more; but when they come to close quarters it may become necessary to limit the time to a few minutes. The troops will be moved according to the rates of marching contained in Chap. VI.

End of Game. The game is generally brought to a conclusion when one side has obtained a decisive advantage over the other sufficient to justify a decision in his favour, or when the bulk of the forces on both sides are in such close contact as to render a decision of the result a matter of too great difficulty. It is for the Umpire to decide when this moment shall have arrived.

CHAPTER II.

Mode of Conducting the Game.

The Umpire.

The successful conduct of the game depends principally upon the Umpire. He regulates, as already stated, the length of moves; he determines all doubtful questions; he decides as to what troops are supposed to be visible to the enemy; he gives notice of the commencement of each successive move, after which no correction is to be allowed in the preceding one: he determines the result of a collision. In all respects his decision is absolute.

As long as the contending forces are out of striking distance of each other, the points to be determined by the Umpire will not as a rule present any difficulty, his duties being principally confined to regulating the distance traversed by the various columns having due regard to the nature of the road, track or open ground over which they are moving. When however any portions of the two forces come into collision with each other, many cases of more or less difficulty will arise. The Umpire will be guided in determining such cases by the rules in Chap. III. These rules are not meant to be absolutely binding on the Umpire, who must use his discretion whether to determine any question on his own authority or to refer to the rules.

The Assistant Umpires.

The Assistant Umpires must carefully avoid any bias in favour of the force to which they are attached. They are the confidential assistants of the Umpire, and they must abstain from giving an opinion on the operations.

Umpires must deal with the question of losses as they affect the value of each unit as a fighting force; this must be represented, where the losses are sufficently great, by removing pieces from the board, and where they are not large enough to be so represented, a note must be taken of the condition of the unit which has been engaged.

Communication between Players limited.

From the commencement of the game all direct communication between Commanders and their subordinates should cease, except where they would be actually present at the same spot. All orders and questions must pass through the Umpire or his assistants, who communicate them in due time to the person for whom they are intended, and who will estimate the time required for carrying the orders.

Important orders should invariably be in writing.

Reports.

All orders, reports, &c., should be actually written on the proper service forms, but the Umpire may, if he chooses to do so, assume for the time the character of orderly, and may deliver the message verbally to the Commander. It will rest with the Commander to extract by questions from the orderly any additional information possessed by him. As it is the Umpire who decides what portion of a force is visible to its opponent, it is obviously the Umpire who must furnish the information contained in the message sent to the Commander from the scouts.

Should a Commander, or one of his subordinates, determining on the receipt of information, &c., to alter the dispositions already made or to issue fresh orders, the time taken between the receipt of the information, &c., at the decision arrived at should be noted, and should be calculated as part of the (imaginary) time of the game.

It may happen that a detached force unexpectedly finds itself in front of a considerable force of the enemy, and it may be undesirable to show this on the map of the Commander of the side concerned. In such a case, the chief Commander should be directed to go away from the map, and the situation should then be shown to the subordinate Commander only, the pieces being subsequently removed from the map and kept on that of the Umpire only.

Scouts.

In the early part of the game the greatest care should be taken in arriving at accurate decisions with regard to the obtaining information by the scouts, since, in the game as in actual warfare, much depends on the work performed by them; but when the main forces are in contact, the scouts, with the exception of those on the flanks or on important points, should be removed from the map. A plan which has been found to work well, is to allow two "special scouting parties" per squadron, or if only two squadrons are employed with the force, two special scouting parties per troop.

All ground within 800 yards of the piece representing the scouting party should be presumed to be visited by some of this special scouting party, and all high ground within that circle is therefore ground from which a scout is observing, although the piece is 800 yards from it. Of course every body of cavalry on the march is supposed to throw out advanced guard and flankers.

When hostile scouting parties or patrols meet, those that are supported by superior formed bodies within reasonable distance will be allowed to proceed; those belonging to the opposing force will be sent back to their nearest support. The loser retires until he reaches a closed body of his own side. The Umpire in allowing the victor to proceed must deduct time for the *mêlée* and resulting confusion. If a scouting party is cut off by the enemy, a throw of a coin determines if any of the party escapes to give information.

Collisions.

Similar principles govern the collision of hostile troops or squadrons. Where large forces on either side come into collision,

the detailed arrangements made by each side respectively will have to be taken into account. The Umpire should, as a rule, before coming to a decision, ascertain what each player considers to be the points in his favour.

The following example of the mode of conducting the game when a crisis is approaching will be found of use.

A is in a defensive position, where he is awaiting the attack.

B is directing his forces on this point, and has learnt that it is held. It is now 9 a.m., and by 10 a.m., by direct march, he would be with the head of his column on the ground occupied by A.

B, in reply to questions, has fully acquainted the Umpires with his intentions. He says, "At 9.15 my columns begin to debouch from the wood 3,000 yards from the enemy's position. No. 1 Brigade deploys in the valley in front. No. 2 moves under cover of the wood to the left of the enemy's position. It will arrive there and be ready for attack at 10 a.m. Then both brigades will advance simultaneously to the attack. My three batteries will at 9.30 have opened fire on the enemy's position, or any of his artillery they may have seen from '——.'"

The Umpire, or assistant, goes to A and says, "At 9.15 heads of columns debouch from the wood opposite you; they disappear in the valley; at 9.30 18 guns at '——' open fire on you; what will you do?"

After having received an answer, both A's and B's troops are arranged by the Umpires at their own discretion, in accordance with the principles of action stated by the Commanders.

A is then informed, "At 9.15 you feel a turning movement on your left; what arrangement will you make?"

After the reply, A's and B's troops are arranged by the Umpire as before.

The success or failure of attacks will be decided by the Umpire, either on his own responsibility, or by reference to the rules.

CHAPTER III.

Rules for the Guidance of the Umpires.

Umpires.

Umpires will be guided in their decisions by the following rules, the tactical situation being the basis of the Umpire's decision. In many cases, the Umpire will find by not taking a decision too hastily, the matter will practically decide itself, by one force electing to retire or declining the combat.

The following general rules and definitions are necessary:—

Equivalent forces.

For the purposes of the game, a battalion of infantry, a regiment of cavalry, and a battery of artillery may be assumed to be of equal value. This is of course a purely conventional arrangement; but in computing the chances of success, some such convention may be found necessary. The respective formations of the different troops must of course be taken into account by the Umpire.

Definitions.

Fresh troops are such as have not been engaged during the game.

The words *repulsed*, *defeated*, and *totally defeated*, are used with special conventional meanings in this game, entailing results as follows:—

Troops *repulsed* are capable of coming into action again after 30 minutes.

Troops *defeated* are capable of coming into action again after one hour.

Troops *totally defeated* are removed from the board.

To indicate the fact of troops being repulsed or defeated, the metal blocks can be turned upside down for the requisite time.

If an attack be supported by an independent second line, the first line can only be *defeated*.

Troops of all arms are considered as moving with the ordinary precautions of warfare, *i.e.*, with advanced guards, scouts, and flankers. This conventional rule, which is necessary to prevent endless discussions, and to avoid the tedious process of representing individual scouts and flankers on the map, will eliminate questions of surprise when troops are marching. But when a force is stationary, its outpost line must be indicated, and any force that has neglected to cover itself with outposts may be surprised.

Ranges* must in all cases be considered as known. Time required for coming into and going out of action must be decided by the Umpire according to circumstances. Ranges.

Losses are determined by the umpires. Losses.

As a rule the victorious side will lose ½ of the loss suffered by the side *defeated* or *repulsed*, or ⅓rd of that by the side *totally defeated.*

Cavalry may be employed to act on foot if desired; but at least ¼th of the force must be considered as employed in holding the horses. In exceptional cases horses may be considered as linked if the Commander states that to be his intention.

When Artillery is in action, the Commander must always state at what target he is firing, and the nature of the projectile used.

Cavalry.

Attacking cavalry.—The situation of the enemy is a specially important consideration. Should cavalry succeed in attacking in flank, or while the enemy is deploying, it may be adjudged victorious, although inferior in strength. Weight must be given to fire of any sort against either side just before or during the attack.

Attacking artillery.—If unprotected by other arms, artilleiy on the move is at the mercy of a cavalry attack.

A frontal attack on guns will entail heavy loss, but should not be considered impracticable.

Decisive results can alone be obtained by a brigade being held together and worked as a whole. The isolated action of separate regiments can only result in partial successes; and it can seldom be desirable to split up a brigade for the purpose of attacking guns while the main body of the opposing cavalry is intact.

In coming to a final decision, it should be considered whether in war the victorious cavalry would be able to carry off or render useless the guns or limbers; or to confirm its success in other ways.

Under artillery fire.—Cavalry halted or moving at a walk, when under artillery fire at and under 1,000 yards, will be adjudged to suffer heavy loss.

Formation within 800 *yards of infantry.*—If formed bodies of cavalry approach in sight, and within 800 yards of infantry, which is not otherwise engaged, they will be adjudged to suffer severe loss proportionate to the number of rifles well directed on them.

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* For purposes of observation the following convention has been adopted. At distances over 3,000 yards, troops although not under cover are considered to be invisible, at 2,000 yards it is possible to distinguish the different arms, and at 1,500 yards the strength may be estimated, the weather being favourable in all cases.

Attacking shaken infantry.—The greatest weight should be given to attacks directed against the flank of infantry. Against shaken or weak infantry even small bodies of cavalry may be successful. The probabilities of success are greatest when the ground is undulating and favourable, and there is less likelihood of loss when an attack is delivered against the flanks of the supports or reserves rather than against the firing line.

Unshaken.—Against unshaken infantry a deep formation and an attack steadily conducted and carried through is required. Should the ground not admit of a screened approach or of surprise, then the cavalry must pass quickly over the fire-swept ground. Cavalry attacks will always be productive, when successful, of heavy loss to the infantry.

Dismounted.—The fire effect of cavalry fighting on foot must be considered in the same way as that of infantry.

Losses.—The losses of cavalry, when repulsed by artillery or infantry, should not be estimated by less than a troop.

Artillery.

Artillery.—As regards artillery action, the following points should be considered:—

Points influencing its action.—(*a*) How far its advance is sheltered, and its opening fire takes the enemy by surprise.

(*b*) The choice of position as regards effective fire action and cover.

(*c*) The distance from the target, its extent, visibility, and mobility; the nature of fire employed, its duration and rate.

(*d*) The number of batteries engaged against the same object.

(*e*) The losses caused by hostile rifle and shell fire.

Casualties.—Advancing or retiring under fire, artillery may be adjudged to drop guns, limbers, or horses, from casualties, or to have guns delayed (up to 10 minutes) according to the intensity of the fire.

Firing on cavalry and infantry.—Cavalry halted or moving at a walk, or enfiladed infantry in any formation affording a fair mark, may be adjudged to suffer loss if guns are firing on them at ascertained ranges under 2,000 yards. Range cannot be ascertained under four shots, except when batteries waiting in position have taken ranges to well defined points.

A battery having concentrated its fire on a bridge over an unfordable stream or on a defile at verified ranges under 2,000 yards, may be considered as successfully opposing the passage. If itself under effective fire the case must be decided according to the opposing conditions.

Can be fought with three working numbers per gun.—It should be borne in mind that guns can be fought up to the moment of capture, providing there are three working numbers per gun.

Against artillery.—Artillery which has found the range can entail loss to a superior number of hostile guns while unlimber-

ing up to a range of 2,600 yards. In an artillery duel, when more than one battery on either side is engaged, the contest cannot be supposed to last for more than 20 minutes when the range is not more than 1,500 yards.

Flanking fire.—Flanking artillery fire must have great importance attached to its effect.

Effect on closed bodies.—Closed bodies, equal in strength to a squadron, can only halt in the open at ranges between 1,500 and 2,200 yards under artillery fire well directed and sustained, when such fire is met by opposing artillery fire. The same rule applies to infantry offering a fair target at ranges between 1,000 and 1,500 yards.

At ranges between 1,000 and 1,500 yards infantry can only move to the front or rear in line unless the ground admits of temporary cover; cavalry moving at a walk under such fire in open ground will be adjudged to suffer loss.

Against infantry in extended order.—At about 1,100 yards artillery can hold out against the fire of extended troops. If strong extended lines approach to 650 yards of guns, insufficiently protected by their infantry, the artillery must retire or be liable to be adjudged to suffer heavy losses.

Under close infantry fire.—Guns may not be limbered up under the close fire of infantry which is not itself otherwise engaged. If gun teams have been exposed to it the guns may not be moved for 20 minutes.

Infantry.

Effect of infantry fire.—The effect of infantry fire is affected by various considerations, such as the range of the enemy and the correct estimation thereof; the nature of the target; the duration of the fire; the fire discipline; and any surprise or other disturbing element.

Closed bodies coming up under infantry fire at 800 yards.—When opposed to a well-conducted, severe rifle fire, closed bodies of troops, without cover, can only get up to 800 yards, or move to a flank when the fire of their advanced troops is about equal to that of the enemy. A halt made for any length of time within these ranges, without cover, will necessitate an umpire's decision.

Under 700 yards.—Under 700 yards, even when covered by a strong firing line, closed bodies of infantry can only move directly to the front or rear.

When the fighting line is closely engaged, that is at a distance of 500 yards (more or less, according to the nature of the ground), no umpire is to permit a superior commander to send forward an order unless it is despatched to the firing line with adequate reinforcements.

Decision under 350 yards.—At distances under 350 yards the decision on the fire fight in the open must be speedily given.

In a defensive position, frontal attack.—(*a.*) Infantry, if judiciously posted behind a shelter-trench or earthwork, can

only be dislodged by a front attack, well commanded, and showing effective fire discipline, of:—3 to 1, with effective artillery fire for at least 15 minutes; 4 to 1, without artillery fire. The attackers lose one-third if unsuccessful, one-fourth if successful. Defenders one-fourth if dislodged.

(*b.*) If judiciously posted in a strong position, but not entrenched, they can only be dislodged by a front attack of:—2 to 1, with effective artillery fire for at least 15 minutes; 3 to 1, without artillery fire. The attackers lose one-fourth if unsuccessful, one-sixth if successful. Defenders one-fourth if dislodged. When a position has been successfully assaulted, the umpire must decide how long a time is to elapse before pursuit is permitted. This time will vary in proportion with the nature of the assault, and the losses sustained by the victors.

Flank attack.—A flank attack may turn either a good position or earthworks; troops outnumbered and outflanked must usually retire.

Meeting in the open.—When infantry meets infantry at 100 yards, both sides advancing, and neither side taking up a defensive position, the weaker must retire.

Holding a defile against mounted troops.—Twelve men on foot, in position, may hold a narrow defile (say 12 feet wide) against mounted troops, provided they have a good field of fire. If these dismount, rules for infantry attacks will apply.

Bayonet attack.—When judging the result of a sword or bayonet attack the following points must be considered:—The previous effect produced by infantry and artillery fire; the number of fresh troops that both sides have thrown into the fight; the way in which the fighting has been carried out; if a flank has been turned; and the nature of the ground.

Miscellaneous.

When works, &c., can be carried by a rush.—Neither works (imaginary), farmsteads, villages, defensible and prepared woods, or copses, can be considered liable to be carried by a rush, unless the attacking force has an overwhelming superiority of force. Attacks of this kind have to be specially prepared, and the decision of the result will rest with the Umpire.

Shelter-trenches.—A shelter-trench can be made available for a single rank in half-an-hour, if the necessary tools are on the spot.

Construction and repair of bridges.

To make ramps to a ditch—

For passage of Infantry	5 minutes.
„ „ Guns	15 „
Repair of bridge over ditch not more than 12 feet wide, if material be at hand (as trestle of pontoon equipment)	10 „
If material has to be sought, the Umpire must decide how long it would take to bring it up and add it to above.	
Pontoon bridge (spans 15 feet), two or three spans..	10 „
The whole, 100 yards	30 „
If under slight musketry or artillery fire, double the times above given.	
Under effective shell fire a bridge cannot be made.	

Destruction of bridges.—Lightly built bridges can be considered as destroyed in 15 minutes, provided sappers, tools, and materials are actually on the spot. Cavalry pioneers with their equipment may be assumed to take 25 minutes.

The Umpire must decide with reference to the success or failure of any attempt to burn, blow up, or otherwise destroy a bridge; and also as regards the time which would be required in carrying out any such undertaking.

Fords.—Maximum depth, in feet, for infantry, 3 to $3\frac{1}{2}$; for cavalry, 4 to $4\frac{1}{2}$; for artillery, $2\frac{1}{2}$ to 3; according as the stream is rapid or sluggish.

CHAPTER IV.

Rules for the Guidance of the Players.*

1. It is not absolutely necessary that a Player should have any previous knowledge of the rules for umpires, &c.; all that is required is that he should know his duty as a leader of troops according to the position he holds in the game.

2. Players must never dispute with the Umpires during the game; all discussions must be reserved until its close.

3. The Umpires make the movements of the metal blocks. Players are not allowed to move them.

4. The duration of each move or set of moves will be given out in minutes by the Umpire, and the imaginary time will be shown by the dial (see page 8), or otherwise.

5. No verbal communication is allowed between the Commander and his subordinates on a side, except when in the course of the game the pieces which represent them respectively are within speaking distance. All communications, by orderlies or by signals, must be made through the Umpires.

6. All orders, reports, &c., should, as a rule, be actually written on service forms.

7. The time allowed to a Commander to decide on his course of action will be deducted from the time allowed for the move.

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* Some of these rules have already been incidentally introduced. For the convenience of Players they are here summarized.

CHAPTER V.

The Maps and Pieces.

1. The maps are on a scale of 6 inches to a mile. The woods are coloured green; the roads brown. The contours, which are at 50 feet vertical interval, should be coloured strongly so as to be visible by candle-light. The sheets hitherto issued from the War Office for the game are parts of a series of War Department surveys, known as Hills east of Dorking. and Hills west of Dorking. These have been coloured specially for the purpose, but any of the Ordnance Survey 6-inch maps can be prepared and adapted in a similar manner.

2. The troops are indicated by metal blocks, one set being coloured red, and the other blue. In handling these blocks it is desirable to avoid touching the coloured surface as much as possible, to prevent it becoming defaced; two pairs of pincers are provided with each box, which will be found convenient for the purpose of moving the blocks. The blocks are made to scale in so far as length of front is concerned, with the exception of those which represent a company, a patrol, and a sentry or vedette; the size of these latter has been somewhat exaggerated. The Pontoon troop and ½ Telegraph battalion of the Engineers are drawn to scale, each being in column of route.

3. Each box should contain sufficient pieces for the manœuvres of 3 Divisions on either side, the units of which are constituted as follows for home defence :—

A Battalion of Infantry in the field consists of:—

8 companies, each of 3 officers and 110* sergeants, drummers, rank and file; 1,000 of all ranks.

A Regiment of Cavalry of the line in the field consists of:—

4 squadrons, each of 6 officers and 110† sergeants, artificers, trumpeters, rank and file; 457 mounted non-commissioned officers and men.

A Battery of Artillery consists at present of:—

	All Ranks.	Horses.	Guns.	Ammn. Wagons.	Other Wagons.
Horse Battery	179	191	6	6	5
Field Battery	171	131	6	6	5

A Field Company of Engineers in the field consists of :—
212 all ranks, and 10 wagons

4. The composition of brigades and divisions will be found in Chapter VII.

---

* Exclusive of 2 privates as stretcher bearers, 1 as driver, and 1 as wagon man.

† Exclusive of 2 privates as stretcher bearers and 4 as drivers.

CHAPTER VI.

Rates of Marching.

Small Bodies.	Yards per Minute.	Miles per Hour.	Proportion of Moves allowed.
Infantry regulation (quick time)* ..	100	3 miles 720 yds.	—
„ „ (step out) ..	110	—	—
„ „ (double)	151	5 miles 275 yds.	6 in 15. Two at a double to be succeeded by two in quick time.
„ advancing firing through a wood	50	—	—
„ „ in attack formation by alternate bodies	25	—	—
Cavalry and artillery on the march, alternately trotting and walking	146	5 miles	—
„ „ at a walk	117	4 „	—
„ „ at a trot ..	235	8 „	Cavalry and Horse Artillery limited at Umpire's discretion. Field Artillery 5 in 10.
„ „ at a gallop ..	352	12 „	Cavalry and Horse Artillery 3 in 10. Field Artillery 1 in 10
Orderlies and individual officers ..	375	—	--
Cavalry scouting in an unknown country	146	5 „	—

* With a brigade it is not safe to reckon on more than 88 yards per minute for 55 minutes in the hour, *i.e.*, about $2\frac{3}{4}$ miles per hour. A division or larger force would probably not exceed $2\frac{1}{2}$ miles per hour, including a halt of 5 minutes, *i.e.*, about 80 yards per minute.

CHAPTER VII.

Length of Columns on the March, based on Field Army Establishments, for Home Defence and Service Abroad, issued with Army Orders, December 1, 1892.

1. In the tables, the cavalry are assumed to march in sections, the artillery in column of route, and the infantry in fours, led horses in half sections. All distances are given in yards.

2. It will be observed that the road spaces are not calculated for the strength of units as given in Chapter V. An example will show the reason for this. A cavalry regiment for home defence consists of 612 of all ranks, but the officers and sergeants do not add appreciably to the length of the column, while batmen riding spare horses and drivers with the regimental transport must also be left out of the calculation. It will consequently be found that a squadron consists of 6 officers, 8 sergeants, 10 corporals (including 2 artificers), 2 shoeing smiths, 2 trumpeters, 2 stretcher bearers, and 88 privates, *i.e.*, 96 rank and file, or a total of 384 for a regiment.

3. The tables show the road space taken up by complete units, brigades, and divisions. The order of march is not indicated, nor is any allowance made for opening out or for distances between the van and main guards or main guard and main body.

4. Distances between the transport of units are taken at 10 yards.

5. The following example shows the manner of utilising the tables to calculate the road space for a division, and the time necessary to make a given march:—

"An infantry division (service abroad) being in close proximity with an enemy, (*a*) calculate the length of the fighting portion of the column; and (*b*) if the van guard passes A at 10.30 a.m., at what hour will the rear of the column pass B, which is 6 miles distant from A. The squadron is assumed to be scouting in advance of the van guard, and distances of 500 and 1,000 yards are to be left between the van and main guard and the main guard and main body."

	Yards.
(*a*) Combatant column	5,026
Less squadron ..	114
	4,912
Add 20 per cent. for opening out	982
	5,894
Add distances between van and main guard and main body	1,500
Total length ..	7,394 yards, or $4\frac{1}{5}$ miles.

About 1 mile in rear would follow the divisional ammunition column and the field hospitals, occupying 1,350 yards, inclusive of allowance for opening out.

(*b*) The division has to march 6 miles plus its own length, and as it moves at about the rate of 80 yards per minute (*See* note to Chapter VI.) it will take $\frac{7,394 + (1,760 \times 6)}{80 \times 55}$ hours for the rear of the combatant column to be clear of B, *i.e.*, 4 hours 5 minutes, or at 2.35 p.m., or with a halt of about half-an-hour at 3 p.m. The rear field hospital will be clear of the same spot 40 minutes later, at 3.40 p.m.

	Home Defence.				Service Abroad.			
	Fighting Portion of Unit.			Regimental Transport and Spare Horses.	Fighting Portion of Unit.			Regimental Transport and Spare Horses.
	Combatant Column.	Carts, Pack Animals and Wagons with Combatants.	Total.		Combatant Column.	Carts, Pack Animals and Wagons with Combatants.	Total.	
Cavalry.								
Squadron, with S. A. A. wagon and pack-horse with tools	95	19	114	—	95	19	114	—
Transport and officers' spare horses ...	—	—	—	39	—	—	—	64
	95	19	114	39	95	19	114	64
Regiment.								
4 squadrons (as above)	380	76	456	156	380	76	456	256
3 squadron distances	4	—	4	—	4	—	4	—
Headquarters, transport, and officers' spare horses	8	—	8	90	8	4	12	70
	392	76	468	246	392	80	472	326
Cavalry Section of 2 machine Guns ...	50	—	50	14	50	—	50	14
Artillery.								
Horse Battery.								
Headquarters, 6 guns and 6 ammunition wagons	232	—	232	—	232	—	232	—
Mounted detachment	96	—	96	—	96	—	96	—
Spare horses...	—	24	24	—	—	24	24	—
Transport and officers' spare horses ...	—	—	—	91	—	—	—	125
	328	24	352	91	328	24	352	125
Field Battery.								
Headquarters, 6 guns and 6 ammunition wagons	232	—	232	—	232	—	232	—
Spare horses...	—	16	16	—	—	16	16	—
Transport	—	—	—	79	—	—	—	109
	232	16	248	79	232	16	248	109
Infantry division; ammunition column	—	—	—	648	—	—	—	675
Cavalry brigade; ,, ,,	—	—	—	286	—	—	—	—
Cavalry division; ,, ,,	—	—	—	—	—	—	—	521
Engineers.								
Field Company.								
Officers, N.-C. officers, and sappers ...	67	—	67	—	67	—	67	—
Tool carts and pack animals	—	72	72	—	—	72	72	—
Transport, &c.	—	—	—	103	—	—	—	138
	67	72	139	103	67	72	139	138
Pontoon Troop.								
(N.-C. officers and sappers on wagons) ...	—	408	408	160	—	408	408	160
Headquarters and ½ Telegraph Battalion.								
(N.-C. officers and sappers on wagons) ...	—	297	297	101	—	297	297	118
Balloon Section.								
(N.-C. officers and sappers on wagons) ...	—	83	83	51	—	83	83	61
Mounted Detachment, R.E.	88	69	157	68	88	69	157	68

	Home Defence.				Service Abroad.			
	Fighting Portion of Unit.			Regimental Transport and Spare Horses.	Fighting Portion of Unit.			Regimental Transport.
	Combatant Column.	Carts, Pack Animals and Wagons, with Combatants.	Total.		Combatant Column.	Carts, Pack Animals and Wagons, with Combatants.	Total.	
Mounted Infantry.								
2 *companies*, with 2 S. A. A. wagons ...	190	30	220	80	—	—	—	—
Headquarters	8	—	8	18	—	—	—	—
	198	30	228	98	—	—	—	—
Battalion.								
8 companies (as above)	760	120	880	320	760	94	854	395
7 company distances	9	—	9	—	9	—	9	—
Headquarters	12	—	12	30	12	—	12	50
	781	120	901	350	781	94	875	445
Machine gun section	50	—	50	14	50	—	50	14
Infantry.								
Battalion.								
8 companies of 100 rank and file... ...	310	—	310	—	310	—	310	—
Band, &c.	32	—	32	—	32	—	32	—
Pack mules	—	4	4	—	—	8	8	—
4 S. A. A. carts and cart for entrenching tools	—	50	50	—	—	50	50	—
Transport and spare horses	—	—	—	72	—	—	—	177
	342	54	396	72	342	58	400	177
Infantry machine gun section	30	—	30	10	30	—	30	10
A. S. Corps.								
Company with an infantry brigade ...	—	—	—	290	—	—	—	398
,, ,, *division* ...	—	—	—	220	—	—	—	368
,, *cavalry brigade* ...	—	—	—	390	—	—	—	558
,, ,, *division* ...	—	—	—	—	—	—	—	578
Medical Department.								
Bearer company	—	200	200	25	—	200	200	35
Field hospital	—	—	—	104	—	—	—	169
Staff.								
Infantry.								
Staff of a brigade	12	—	12	26	12	—	12	36
,, *division*...	25	—	25	78	25	—	25	118
Cavalry								
Staff of a brigade	12	—	12	35	12	—	12	50
,, *division*	—	—	—	—	25	—	25	144

—	Home Defence.		Service Abroad.	
	Combatant Column.	Regimental Transport and 1st Line Supply.	Combatant Column.	Regimental Transport and 1st Line Supply.
Infantry Brigade.				
Staff	12	26	12	36
4 Battalions	1,584	288	1,600	708
1 Machine Gun Section	30	10	30	10
Bearer Company	200	25	200	35
Company A. S. Corps	—	290	—	398
Field Hospital	—	—	—	169
Distances	100	50	100	60
	1,926	689	1,942	1,416
Cavalry Brigade.				
Staff	12	35	12	50
3 Regiments	1,404	738	1,416	978
1 Machine Gun Section with Cavalry	50	14	50	14
Battery Horse Artillery	352	91	—	—
Mounted Detachment R.E. ..	157	60	—	—
2 Companies Mounted Infantry	228	98	—	—
1 Machine Gun Section with Mounted Infantry	50	14	—	—
Bearer Company	200	25	200	35
Cavalry Brigade Ammunition Column	—	286	—	—
Company A. S. Corps	—	390	—	558
½ Field Hospital	—	50	—	169
Distances	150	80	75	50
	2,603	1,881	1,753	1,854
Infantry Division.				
Staff	25	78	25	118
Squadron	114	39	114	64
2 Infantry Brigades	3,852	1,378	3,884	2,832
3 Field Batteries	744	237	744	327
Field Company R. E.	139	103	139	138
Divisional Ammunition Column	—	648	—	675
Company A. S. Corps	—	220	—	368
Field Hospital	—	104	—	169
Distances	120	90	120	90
	4,994	2,897	5,026	4,781

	Home Defence.		Service Abroad.	
	Combatant Column.	Regimental Transport and 1st Line Supply.	Combatant Column.	Regimental Transport and 1st Line Supply.
Cavalry Division.				
Staff	—	—	25	144
2 Brigades	—	—	3,506	3,708
2 Batteries Horse Artillery ..	—	—	704	250
Mounted Detachment R. E. ..	—	—	157	68
Battalion Mounted Infantry ..	—	—	875	445
1 Machine Gun Section with Mounted Infantry	—	—	50	14
Cavalry Divisional Ammunition Column..	—	—	—	524
1 Company A. S. Corps	—	—	—	578
1 Field Hospital	—	—	—	169
Distances	—	—	110	80
	—	—	5,427	5,980

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